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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,604	04/26/2001	Haixiang He	2494/105	8615

34645 7590 04/11/2006

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EXAMINER	
NGUYEN, HAI V	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/842,604	HE, HAIXIANG	
	Examiner	Art Unit	
	Hai V. Nguyen	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the communication received on 23 January 2006.

2. Claims 1-28 are presented for examination.

Specification

3. Claims 10, 18 are objected to because of the following informalities:

4. Claim 10, which is amended, is inconsistent with the amended claims 1, 18. For example, the limitation of "accessing a plurality of the existing protocol independent multicast database" of claims 1, 18 and the limitation of "locating the protocol independent multicast database within each of the set of the routers," in claim 18. Appropriate correction is required.

Response to Arguments

5. Applicant's arguments and amendments received on 23 January 2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore,

the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-6, 8-15, 18-23, 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by **Shaughnessy** et al. U.S. patent # **6,141,347.**

8. As to claim 1, Shaughnessy teaches substantially the invention as claimed, including a method of producing a multicast tree *(a spanning tree for a given multicast group)* for an application configured to use a first multicast routing protocol *(DVMRP)* from existing protocol independent multicast routing information *(Fig. 2, multicast addresses)* in a network, at least some of the protocol independent multicast routing information *(Fig. 2, talk group IDs)* having been created from multicast information associated with an application configured to user a second multicast routing protocol *(PIM-DM),* the network including a plurality of network devices *(Fig. 2, subscriber units 210-217)* including at least a plurality of routers *(Fig. 4, multicast routers)* that are members of a multicast associated with the multicast tree, a set of the routers each including a protocol independent multicast database containing protocol independent multicast routing information *(Figs. 2-6, Abstract, col. 3, line 7 – col. 9, line 14),* the method comprising the steps of:

accessing a plurality of the protocol independent multicast routing databases *(Figs. 2- 6, databases 220-225; where the sites maintain such mapping, the identification is performed by accessing the mapping stored within the site and retrieving the corresponding multicast address, Abstract, col. 3, line 7 – col. 9, line 14; Fig. 5, step 502)*;

retrieving at least a portion of the existing protocol independent multicast routing information from each located protocol independent multicast database *(Figs. 2- 6, databases 220-225; where the sites maintain such mapping, the identification is performed by accessing the mapping stored within the site and retrieving the corresponding multicast address, Abstract, col. 3, line 7 – col. 9, line 14; Fig. 5, step 502)*;

tracing the retrieved existing protocol independent multicast routing information to form the multicast tree *(The connectionless packet network 201 supports at least one multicast address. In the context of the present invention, a multicast address, regardless of any underlying implementation, provides one-to-many or many-to-many communications capability within the network 201. Multipoint routes pertaining to multicast addresses used in the present invention are maintained by the routers forming the network, rather than by a centralized entity. A suitable technique for providing multicast addressing capabilities is through the use of Internet Protocol (IP) Multicast. IP Multicast is based on the well-known Internet Group Management Protocol (IGMP) which allows a multicast router to track the existence of multicast group members on local networks coupled to that router. Additionally, multicast routers use the information provided by IGMP in conjunction with a multicast routing protocol to support forwarding of data across a network of routers. Given the nature of wireless communication systems, sparse mode protocols such as the Core Based Tree (CBT) protocol and the Protocol Independent Multicast--Sparse Mode (PIM-SM) protocol are preferred multicast routing protocols for use in the present invention. However, it is anticipated*

that dense mode protocols such as the Distance Vector Multicast Routing Protocol (DVMRP), the Multicast Open Shortest Path First (MOSPF) protocol, and the Protocol Independent Multicast--Dense Mode (PIM-DM) protocol may also be used to implement the present invention. A common feature of these multicast routing protocols is that each establishes a "spanning tree" which, for a given multicast group, defines all of the router interfaces which contain group members and the necessary routes between these interfaces to provide the multicast distribution with a minimum amount of data replication. Because the spanning tree can be dynamically altered by the routers in the network, the need for a centralized database to track the location of individual group members can be eliminated, as described below, col. 3, line 7 – col. 9, line 14).

9. As to claim 2, Shaughnessy teaches, wherein the multicast includes a root node, the retrieved existing protocol independent multicast routing information being traced from the root node, the root node being one of the plurality of network devices *(Fig. 2, Abstract, col. 3, line 7 – col. 9, line 14).*

10. As to claim 3, Shaughnessy teaches, wherein the network implements the Internet Protocol, wherein the first multicast protocol is DVMRP, and wherein the second multicast protocol is PIM *(Figs. 2-6, Abstract, col. 3, line 7 – col. 9, line 14).*

11. As to claim 4, Shaughnessy teaches, wherein each of the set of routers includes a protocol independent unicast database *(Fig. 2, the talk group" G" at least includes the subscribers units having reference numbers 210 and 217)* having network information *(multicast addresses)*, the method further including:

accessing a plurality of the protocol independent unicast databases *(Figs. 2-6, databases 220-225; where the sites maintain such mapping, the identification is performed by accessing the mapping stored within the site and retrieving the corresponding multicast address, Abstract, col. 3, line 7 – col. 9, line 14; Fig. 5, step 502);*

retrieving at least a portion of the network information from each accessed protocol independent unicast database *(Abstract, Figs. 2-6, col. 3, line 7 – col. 9, line 14; Fig. 5, step 502)*; and

using the retrieved network information to form the multicast tree *(Abstract, Figs. 2-6; col. 3, line 7 – col. 9, line 14).*

12. As to claim 5, Shaughnessy teaches, wherein each protocol independent multicast database is a management information base *(Fig. 2, bases 220-225l)*.

13. As to claim 6, Shaughnessy teaches, wherein at least one of the plurality of network devices includes a protocol dependent multicast database, the multicast tree being formed free from any data retrieved from the protocol dependent multicast database *(Abstract, Figs. 2-6; col. 3, line 7 – col. 9, line 14)*.

14. As to claim 8, Shaughnessy discloses, wherein the set of routers includes no more than one of the plurality of network devices *(Abstract, Figs. 2-6; col. 3, line 7 – col. 9, line 14)*.

15. As to claim 9, Shaughnessy discloses, wherein the set of routers includes a first router and a second router *(multicast routers)*, each protocol independent multicast database including a set of protocol independent multicast data, the set of protocol

independent multicast data being different in the protocol independent multicast database in the first router than the set of protocol independent multicast data in the protocol independent multicast database in the second router *(Shaughnessy, Abstract, Figs. 2-6; each multicast router in each site has different mappings databases associated with the talk groups, col. 3, line 7 – col. 9, line 14)*.

16. Claim 10 is corresponding apparatus claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

17. Claims 11-15,17 are similar limitations of claims 2-6, 8; therefore, they are rejected under the same rationale as in claims 2-8.

18. Claim 18 is corresponding computer readable medium claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

19. Claims 19-23, 25 are similar limitations of claims 2-6, 8; therefore, they are rejected under the same rationale as in claims 2-8.

20. Claim 26 is corresponding apparatus in means plus function claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

21. Claims 27-28 are similar limitations of claims 4-5; therefore, they are rejected under the same rationale as in claims 4-5.

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Shaughnessy** as applied to claims 1-6 above, and further in view of **Dobbins** et al. U.S patent # **5,951,649**.

24. As to claim 7, Shaughnessy does not explicitly disclose, the Simple Network Management Protocol.

In the same field of endeavor, Dobbins discloses the Simple Network Management Protocol (*col. 16, lines 20-23).*

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention made to have incorporated Dobbins' teachings of the SNMP protocol with the teachings of Shaughnessy, for the purpose *of accessibility to the managed objects (Dobbins, col. 16, lines 20-23).*

25. Claims 16, 24 are similar limitations of claim 7; therefore, they are rejected under the same rationale as in claim 7.

26. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 571-272-3901. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai V. Nguyen
Examiner
Art Unit 2142

THONG VU
P.E.